



Biomes of the World

When looking at life on Earth (the biosphere), the terrestrial components of the Earth can be broken down into distinctive groupings, known as **biomes**. Biomes are mainly distinguished from one another by climate, soil, and vegetation (plant life). These characteristics together support a collection of animal life. The *biota* (plants and animals) of each biome have similar characteristics throughout the world.

The following features distinguish one biome from another:

Climate

The characteristics of a biome are determined by temperature and rainfall.

Example: Tropical Rain Forests have year-round rainfall with warm temperatures ideal for lush, leafy plant growth. A Boreal Forest (evergreen coniferous) has plants and trees that must endure cold, snowy weather in winter and little rain in the summer. The plant life of each of these areas is significantly different as each has adapted to survive the area's climate conditions.

Soil

Certain soil types characterize a biome. Soils are very important because they determine what types of plants will grow within a biome. They are influenced by the parent-rock geology and the climate.

Example: The soils of a Temperate Broadleaf biome are characterized by a dark brown, slightly acid soil. This is due to the heavy tree cover of the biome and its warm, wet summers that cause a buildup of organic materials forming a loamy soil.

Vegetation

The plant life of biomes is dependent on the soil and climate of the area. Plants adapt to specific conditions by changing such characteristics as leaf shape and size.

Example: Adapting to the long, dry summer conditions, the chaparral plants of the Mediterranean biome are woody shrubs containing small, thick, waxy leaves capable of retaining water moisture.



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Animals

Climate, soil, and vegetation all help determine the animal life and adaptations of the animals to a biome.

Example: Burrowing, nocturnal animals are typical of a Desert biome, having adapted to hot daytime temperatures.

Location

Some biomes have similar location patterns around the world. Similar biomes are often found at the same latitude around the world.

Example: Various Desert biomes around the world are located between 20° and 30° latitude, including Chihuahuan Desert in Mexico, Sahara Desert in North Africa, and Great Indian Desert in India. Altitude similarities exist as well. Ascending a tall mountain, the higher in altitude you climb, the cooler the temperature, the thinner the air, and the longer the winter. Several different climates exist on one mountain, so different biomes can exist as well.

Example: As one climbs in altitude, a Temperate Deciduous Forest biome (broadleaf deciduous trees) can change to a Boreal Forest biome (evergreen pine trees) and eventually become a Tundra biome (treeless and cold).